

ABSTRACT

A method for amplifying expressed sequences from genomic DNA (gDNA) selected from a mammalian or higher order plant species using the 3'UTR of the gene sequence. 3'UTR typically exists as a single exon. A 3'UTR of a gDNA sequence or an exon of a gene defined by computer software is identified based on the presence of a stop codon and a polyadenylation signal in the gDNA sequence corresponding to a expressed mRNA sequence. A gDNA sequence that is highly unique to the given gene is selected, and a probe for the sequence is designed. Two rounds of polymerase chain reaction are performed on the 3'UTR sequence. PCR product from the first round is separated by size-differentiation, and a predetermined band from the size-differentiated samples is chosen. Without need for purification, a second round of PCR is performed to amplify the predetermined sequence of gDNA. The method provides alternative process to acquire and amplify expressed sequences, especially for those which cDNA clones are not available. Hence, the method is useful in fabricating high-density DNA arrays of enhanced, widely varying genetic content.